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Oceans and the law of the sea

Letter dated 23 April 2012 from the Permanent Representative of China to the United Nations addressed to the President of the General Assembly

Pursuant to General Assembly resolution 65/37 B, a workshop was held in the People's Republic of China from 21 to 23 February 2012, under the auspices of the United Nations, in support of the first phase of the first assessment cycle of the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects.

I have the honour to transmit herewith the attached summary of the workshop (see annex).

I would kindly request that the present letter and its annex be circulated as a document of the General Assembly under agenda item 76.

(*Signed*) **Li Baodong**
Permanent Representative

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Annex to the letter dated 23 April 2012 from the Permanent Representative of China to the United Nations addressed to the President of the General Assembly

Final report of the workshop held under the auspices of the United Nations in support of the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects

Sanya, China, 21-23 February 2012

I. Background

1. Following the recommendations made at the second meeting of the Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects, and endorsed by the General Assembly in resolution 66/231, a workshop for the Eastern and South-Eastern Asian Seas was held from 21 to 23 February 2012 in Sanya, China, under the auspices of the United Nations in support of the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects.

2. The workshop was conducted in close cooperation between the host country, the People's Republic of China, and the secretariat of the Regular Process, the Division for Ocean Affairs and the Law of the Sea of the Secretariat. It was organized with the cooperation and support of the United Nations Environment Programme (UNEP), the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization and the Asia-Pacific Network for Global Change Research (APN). It proceeded in accordance with its agenda (annex 1).

3. Representatives of the following States participated in the workshop: Islamic Republic of Iran, Japan, People's Republic of China, Qatar, Republic of Korea, Singapore and Thailand. Representatives of the following United Nations specialized agencies, offices and programmes also participated in the workshop: the Division for Ocean Affairs and the Law of the Sea, the Sub-Commission for the Western Pacific (WESTPAC) of the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization and UNEP. In addition, the following intergovernmental organizations were represented at the workshop: the Coordinating Body on the Seas of East Asia (COBSEA) of UNEP, the North Pacific Marine Science Organization (PICES), the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and the North-West Pacific Action Plan (NOWPAP) of UNEP. Individual members of the Group of Experts of the Regular Process also attended the workshop, as well as observers from China and WWF-China. Support was provided by local support staff. The list of participants, observers and support staff is attached (annex 2).

II. Proceedings of the workshop[1]

Agenda items 1 and 2: opening of the workshop and adoption of the agenda

4. The workshop was opened by Mr. Huikang Huang, Director General, Department of Treaty and Law, Ministry of Foreign Affairs, China, under the chairmanship of Mr. Yuyin Wang, Director General, National Marine Environment Monitoring Centre (NMEMC), State Oceanic Administration, China. Representatives of the State Oceanic Administration of China and the Division for Ocean Affairs and the Law of the Sea also gave opening remarks. All speakers mentioned the importance of the Regular Process and protection and sustainable use of coastal and marine resources, and wished the participants a successful workshop.

5. The host country nominated Mr. Alan Simcock, Joint Coordinator of the Group of Experts of the Regular Process and Ms. Juying Wang, member of the Group of Experts and Chief, Marine Chemistry Division, NMEMC, as the Co-Chairs of the workshop. A team of rapporteurs was appointed, consisting of Ms. Connie Chiang (Consultant, NMEMC), Mr. Wouter Rommens (Consultant, UNEP/GRID-Arendal) and Mr. Wenxi Zhu (Head, WESTPAC).

6. The workshop adopted its agenda as set out in annex 1.

Agenda item 3: background of the Regular Process

7. The background of the Regular Process was introduced to participants at the workshop.

The Regular Process according to the mandate from the United Nations (Mr. Michael Shewchuk, Deputy Secretary of the Regular Process, Legal Officer, Division for Ocean Affairs and the Law of the Sea (annex 3))

8. The rationale, history, mandate, institutional arrangements and next steps of the Regular Process were explained. Prior to the Regular Process, there was no system of assessments to provide a global picture of the state of the marine environment or its socioeconomic aspects. There was also a need to integrate assessments, understand the ocean-land linkages and create a more effective interface between scientific knowledge and decision-making. In 2002, States at the World Summit on Sustainable Development recommended the creation of a regular process for these purposes. The preparatory phase of the Regular Process was from 2002 to 2005, followed by the start-up phase occurring from 2005 to 2009. For 2009 to 2010, the framework, first cycle and modalities of the Regular Process were developed. From 2010 to 2012, the first phase of the first cycle began, under the oversight and guidance of the Ad Hoc Working Group of the Whole, to develop the strategy for the first global integrated marine assessment. The second phase of the first cycle in 2013 and 2014 will produce that first assessment.

9. The institutional arrangements, in addition to the Ad Hoc Working Group of the Whole, include the following:

[1] The presentations made at the workshop (annexes 3-14) are available from: http://regular.process.mem.gov.cn/eng/workshop5-3.html.

(a) Bureau of the Regular Process: three Member States from each regional group of the General Assembly, with one Member State from each regional group and one Co-Chair needed for a quorum;

(b) Group of Experts of the Regular Process: up to five experts nominated by each regional group. The Group of Experts has designated two of its members to act as joint coordinators;

(c) Pool of experts: a much larger body of experts, which will consist of up to 2,000 individual experts nominated, according to the agreed criteria, by Member States through each regional group. The target date for the first appointments to the pool of experts was 16 March 2012.

10. For the remaining work of the current cycle, thus far, two out of seven regional workshops have been held, while other workshops are being planned or considered. The third meeting of the Ad Hoc Working Group of the Whole (23-27 April 2012) focused on finalizing the outline for the first global integrated marine assessment, developing the inventory on capacity-building, finalizing the terms of reference and working methods for the Group of Experts, preparing guidance for authors and developing the Regular Process website.

11. It was important to understand the pressures and difficulties in this work, and the need for capacity-building and transfer of technology. Financial constraints were being faced by States to support the process, and some alterations had already been made to the working modality according to available resources.

12. During the subsequent discussion, the time frame for the work of the Regular Process was further clarified as follows:

(a) Most of the preparation work should be completed by the end of 2012;

(b) The aim will be to prepare by the end of 2013 a complete first draft of the first global integrated marine assessment;

(c) In 2014, the first draft report will undergo peer review, final approval and translation, and possible presentation to the Ad Hoc Working Group of the Whole;

(d) The assessment will aim to use the best available and most recent data. In practice, this may mean that 2010 will be the cut-off date.

Agenda item 4: the framework of the first cycle of the Regular Process

13. A series of presentations was given on various aspects of the Regular Process, including capacity-building for marine assessments.

Aims, scope and expected output of the workshop (Mr. Alan Simcock, Group of Experts (annex 4))

14. Mr. Simcock, who adopted a cross-cutting approach in describing the frameworks for discussion that required the participants' consideration, emphasized the aims, scope and desired outcome of the workshop.

15. The main points in the subsequent discussion were:

(a) The assessment of assessments, during the start-up phase of the Regular Process, focused more on the methods needed to deliver relevant, legitimate and credible future assessments;

(b) The aim was that the assessments under the Regular Process should eventually be able to use shared, comparable assessment methods over the whole of the temporal and spatial scales they cover. In the meantime, some inconsistencies were likely to be inevitable;

(c) Workshops are intended to provide a means to allow countries to provide inputs to the process. The inventories of assessments from States and regional organizations that resulted from the workshops would be essential building blocks;

(d) The current intention for the working processes was that there would be a first stage of working papers prepared, under the leadership of a member of the Group of Experts for each chapter of the eventual assessment, by drafters drawn from the pool of experts. Consultants, also drawn from the pool of experts, would be invited to review these working papers, which would then be revised by the drafters;

(e) On the basis of the working papers, the drafters would then prepare draft chapters. The Group of Experts collectively would review these draft chapters and assemble them into the first draft of the first global integrated marine assessment. This first draft would be sent to States and independent peer reviewers. A first draft integrated report would be sent to independent reviewers and States for comments. In the light of the comments, the Group of Experts would agree on a final version for submission to the Ad Hoc Working Group of the Whole;

(f) There was thus a need for a large pool of experts to assist with this process. States have been requested to nominate individual experts to the pool by a target date of 16 March 2012;

(g) In general, no payments are intended to be made to the experts and their services would be provided voluntarily. If resources permitted, it might be possible to consider assistance to experts from developing countries who could not otherwise take part;

(h) The assessment of assessments recommended that States and international organizations should nominate focal points to liaise between the Group of Experts and national agencies. Focal points may also be useful to coordinate, at the national level, nominations to the pool of experts. The Ad Hoc Working Group of the Whole was requested to consider this further at their meeting in April 2012.

Outline of the firs' global integrated marine assessment (Mr. Peter Harris, Group of Experts (annex 5))

16. Mr. Harris presented the current proposal for the outline of the first report. This version had already undergone discussion and had been revised in the light of comments by States. The underlying approach was to be the Driving Forces — Pressures — State — Impact — Responses framework (DPSIR). The outline was divided into seven parts: (a) summary for decision makers; (b) context of the assessment; (c) ocean ecosystem services; (d) cross-cutting issue — food security and safety; (e) other human activities; (f) biodiversity and habitats; and (g) overall evaluations.

17. Each human activity (other than those in the part of the report on food security and safety) would form its own chapter. The way in which the "Responses" aspect should be covered and the scope of conclusions on needs for capacity-building still had to be agreed by the Ad Hoc Working Group of the Whole. As biodiversity

covers a vast subject area, the assessment could not address everything. This part would provide an overall assessment of the status of marine biodiversity and would also assess certain significant groups and habitats (identified ecologically and biologically sensitive areas, vulnerable marine ecosystems and other species and habitats already identified by competent authorities as needing protection).

18. The main points in the subsequent discussion were:

(a) The assessment would concentrate on the facts. It would not provide recommendations to States for action, although some issues may leave little doubt that some actions are needed. In light of comments received, it was clear that the sections on "Responses" would need to be descriptive, not prescriptive;

(b) The proposed outline was extensive in its scope. However, the request was for an integrated assessment of the marine environment. It was therefore necessary to be comprehensive in order to ensure that important issues were not overlooked. But the assessment would not cover all issues at the same level of detail as some topics should not need to receive as much attention as others;

(c) Information already collected, and conclusions reached, by the Intergovernmental Panel on Climate Change (IPCC) would be used to assess impacts of climate change. Regional data on issues such as sea-level rise and ocean acidification would also provide information on climate change impacts;

(d) The representative of China informed the workshop that some of their comments still remained to be taken into account in the proposed outline. These were as follows:

(i) That the aim of the marine environment assessment was to provide technical support for national policymaking and that the assessment should focus on technical aspects rather than appraise marine policy and marine governance. The current version of the draft outline contained phrases such as "regulatory framework" or "regulatory approaches" which relate to policy assessment and should be deleted;

(ii) To achieve a balance of ocean protection and utilization, a comprehensive analysis should be made of the relationship between human activities and the marine environment, for example, to add content such as the impact of marine environmental protection measures on shipping and other marine economic activities;

(iii) Chapter 29 of the draft outline relates to the impact of national defence operations on the marine environment. As defence activities often concern sovereign matters, the assessment should not involve itself with national defence operations.

Process of drafting the first global integrated marine assessment (Mr. Alan Simcock, Group of Experts (annex 6))

19. The presentation provided information on the assessment team; the types of input from members of the Group of Experts and the pool of experts; selection of drafters; the sequence of inputs by drafters, consultants, peer reviewers and the Group of Experts; and guidance for authors.

20. The guidance for authors would help all parties involved to move in the same direction and would provide a transparent process. It would cover the kinds of information that should be used in the assessment; the preference for publicly available, peer-reviewed information; the safeguards for information that has not been peer-reviewed; how to deal with divergent views, uncertainty and risk; and the need to ensure proper citation of sources used and to disclose any conflict of interest. At a later stage, the guidance would also cover approaches to integration and a style sheet. All authors would act in their personal capacity as independent experts and were not representatives of a Government or any other authority or organization.

21. In the subsequent discussion, it was emphasized that each person involved would need a clear statement from the United Nations setting out the basis on which they were invited to participate.

Agenda item 5: overview of existing regional assessments and presentation of regional programmes

22. Regional organizations were invited to introduce assessments carried out by them.

Overview of the existing assessments in the Eastern and South-Eastern Asian Seas (Mrs. Juying Wang, Group of Experts (annex 7))

23. The presentation provided extensive information on existing assessments in the region, relevant outputs by various regional organizations and projects, priority issues at the regional and supra-regional levels and capacity-building needs.

24. A preliminary inventory of assessments was carried out but further work was required after the workshop to expand the inventory, particularly information on national assessments. While integrated assessments existed in the region, some may need to be updated. Based on the preliminary inventory, the status of available assessments was as follows:

(a) Coverage and extent of biological and physical assessments — some available;

(b) Socioeconomic conditions — some available, mostly assessments at irregular points in time;

(c) Six databases existed.

25. Priority issues in the region include: unsustainable exploitation of fish and other living resources, decline in landings of commercial species, habitat loss and degradation, eutrophication, change in ecosystem structure and function, and impacts from land-based activities, such as large dams and land reclamation. At the supra-regional level, these included: climate change impacts, ecosystem modification, and fate and transport of atmospheric pollutants.

26. Regional organizations provided information on various types of assessment, the substantial amount of data and information publicly available, and regular monitoring and assessment activities in some parts of the region. However, there were needs for capacity-building to provide information on living aquatic resources, to implement long-term and well-planned biodiversity studies, to link environmental and socioeconomic issues, and to become self-sufficient to continue activities after

externally funded regional projects end. Other issues to be considered included: how to obtain certain data, e.g. time series data; quality assurance and quality control of available data; how to exchange data; how to improve integrated assessment methodologies; and how to develop evaluation benchmarks, reference levels and ecotoxicological criteria for assessment.

Yellow Sea and East China Sea activities reported by PICES and the Korean monitoring programme (Professor Chul Park, Group of Experts (annex 8))

27. The PICES report entitled "Marine ecosystems of the North Pacific Ocean 2003-2008" was introduced, focusing on the Yellow and East China Seas. The presentation covered physical and biological aspects, and presented some data from the publication, as well as trends in select areas and anomalies observed.

28. The Republic of Korea's three main monitoring programmes were also introduced:

(a) Serial oceanographic observations had been carried out since 1921 by the National Fisheries Research and Development Institute bimonthly or seasonally. The main variables measured were: water temperature, salinity, dissolved oxygen, nutrients, chlorophyll-a, phytoplankton and zooplankton;

(b) Coastal environment monitoring around all coastal areas in the Republic of Korea was carried out every three months, with a summer survey in the offshore areas. Information from the monitoring programmes was available on the website and in annual reports;

(c) Marine ecosystem investigation was carried out every 10 years, selecting one site to investigate plankton, benthic organisms, marine birds and mammals, protozoa and environmental characteristics.

NOWPAP activities contributing to the marine environment assessment (Mr. Alexander Tkalin, Coordinator, UNEP Northwest Pacific Action Plan (annex 9))

29. NOWPAP activities, as identified by member countries as important, were introduced along with some thematic assessments that had been carried out with respect to: harmful algal blooms, riverine and direct inputs of contaminants, legal aspects of environmental protection, an overview of marine and coastal nature reserves, the atmospheric deposition of contaminants, marine litter, status of marine and coastal biodiversity, and a rapid assessment of biodiversity status and threats.

30. A report on the state of the marine environment in the NOWPAP region had been prepared and offered an integrated assessment for this area.

31. NOWPAP can contribute to the Regular Process through capacity-building activities and with the production of the second state of marine environment report after 2012, which would focus more on socioeconomic issues.

Contribution of IOC and its Sub-Commission for the Western Pacific in support of the Regular Process for Eastern and South-Eastern Asian Seas (Mr. Wenxi Zhu, Head, WESTPAC (annex 10))

32. Mr. Wenxi Zhu highlighted the importance of the Global Ocean Observing System (GOOS) and the International Oceanographic Data and Information

Exchange (IODE) as international platforms for generating, and facilitating the change of, oceanographic data, products and services to serve the purpose of the Regular Process. In particular, he informed the meeting of the recent decision of the IOC Assembly to incorporate into IODE the Ocean Biogeographic Information System (OBIS) of the Census of Marine Life, an international collaborative initiative conducted from 2000 to 2010 to assess and explain the diversity, distribution and abundance of marine life in the oceans. The OBIS database contained 31.9 million observations.

33. Regional activities by the IOC Sub-Commission for the Western Pacific which could contribute to the Regular Process included the development of the North-East Asian Regional-Global Ocean Observing System (NEAR-GOOS) and the Southeast Asian-Global Ocean Observing System (SEAGOOS) and assessments of harmful algal bloom, and marine alien species. He drew attention to a WESTPAC Working Group on the Regular Process which had been established at the eighth intergovernmental session (Bali, Indonesia, May 2010), with the intended objective of facilitating the implementation of the Regular Process by providing technical support to, and assisting capacity-building in, the Member States in the region. Two publications involving WESTPAC scientists could also provide useful information in some fields; WESTPAC would provide details on request.

34. Since many technical uncertainties remained concerning assessment methodology, criteria, standards and capacity of Member States, he identified several regional mechanisms that IOC and WESTPAC could provide to facilitate technical consultations on those uncertainties, including its intergovernmental session, the WESTPAC Working Group on the Regular Process and the WESTPAC International Scientific Symposia. He finally expressed the great willingness of IOC and WESTPAC to provide and/or develop training programmes for all Member States in the region to meet the capacity-building needs for the Regular Process, and listed the ongoing training programmes conducted either in the IOC regional training and research centres or by respective programmes/projects.

Measuring and reporting progress: state of the coasts reporting (Mr. Raphael Lotilla, Executive Director, Partnerships for Environmental Management in South-East Asia (annex 11))

35. Mr. Lotilla explained that PEMSEA activities covered a wide range pursuant to its role as regional coordinating mechanism for the implementation of the Sustainable Development Strategy for the Seas of East Asia, which had been adopted by 14 countries of the region. Among the agreed regional targets was the implementation of integrated coastal management (ICM) in at least 20 per cent of the region's coastline by 2015, with regular regional reporting on ICM implementation every three years. Monitoring the implementation of ICM using the state of coasts (SOC) report provided a local-level reporting system and showed the areas needing policy intervention. The state of coasts report provided baseline information on demographic, socioeconomic and environmental status as well management actions. Data gaps were identified and capacities enhanced throughout the cyclical process of ICM planning and implementation. Multi-stakeholder involvement, including in monitoring and assessment activities, was a key element in ICM and required continued capacity development among the different stakeholders.

36. PEMSEA had developed a list of 35 core indicators on various aspects of sustainable development and governance measures, which incorporated the global and regional commitments, such as Agenda 21 and the Millennium Development Goals. This integrated socioeconomic issues, particularly at the local level, allowing comparison of changes over time. A "Guidebook on the state of the coasts" provided guidelines for the implementation of ICM, which was being used in a number of sites in various countries throughout the region. The PEMSEA Network of Local Governments had committed to implement SOC reporting in all member sites by 2015.

UNEP COBSEA marine and coastal assessments (Mr. Ellik Adler, Coordinator, COBSEA (annex 12))

37. The presentation on COBSEA briefly explained the UNEP Regional Seas Programme. COBSEA was established in 1981 and served as the intergovernmental platform to oversee the implementation of the action plan for the protection and sustainable development of the marine and coastal areas of the East Asian Seas region but no legally binding convention existed.

38. COBSEA had produced various assessments:

(a) The state of the marine and environment report for the East Asian Seas 2009 showed the status and trends, management initiatives, emerging issues, case studies and best practices, and actions for the future;

(b) Marine litter in the East Asian Seas region;

(c) Spatial planning in the coastal zone of the East Asian Seas region;

(d) Coastal erosion;

(e) East Asian Seas knowledge base;

(f) Assessment on pressures, impacts and responses of biodiversity.

39. The main points made in the discussions of these presentations were:

(a) Many regional organizations' work could contribute to the assessment. The challenge was how to integrate the information;

(b) China had conducted numerous activities that could support the Regular Process: monitoring, surveillance and management were performed annually. Bulletins were regularly produced on various oceanographic topics, the main ones being monitoring and assessment of environmental status and trends of sea water quality, sediment, atmospheric deposition, riverine inputs, mariculture, recreational waters, dumping sites, and oil and gas extraction areas. A project on biodiversity management in the coastal areas of the South China Sea (funded by the Global Environment Facility (GEF)) could provide information on the assessment and management of coastal biodiversity resources;

(c) A representative of China provided information on the National Marine Data Information System (NMDIS), which contained marine economic statistics, data on marine economic activities and studies on the relationship between the marine industry and the marine environment. A yearbook of marine statistics was produced annually and contained information on oil and gas production, mariculture production and ocean-related employment. Data on other countries was collected for

comparing the classification of marine economic activities between China and other major countries.

Agenda item 6: capacity-building for integrated assessment

40. The following presentations were given to provide suggestions on enhancing skills:

Capacity-building for integrated assessment: how do we approach this? (Mr. Alan Simcock, Group of Experts (annex 13))

41. This presentation (which was explained to be a personal view and had not been considered by the Group of Experts) provided some suggestions on how capacity-building for integrated assessment might be undertaken. An integrated assessment would include economic, environmental and social issues in the context of ocean processes, human activities and biological diversity. There was vast information available and it may be difficult to select the relevant ones for inclusion. Some suggestions were provided, such as focusing on keystone species or economically significant species. Examples of linkages between state and pressure were provided. Options for the types of information to be used for integrated economic and social assessments were also put forth, such as human health and income of marine workers.

Technical capacity-building for marine assessments: sustainable seas programme (Mr. Wouter Rommens, UNEP/GRID-Arendal (annex 14))

42. Mr. Rommens reported on the sustainable seas capacity-building programme (UNEP/GRID-Arendal). This capacity-building programme aimed to assist developing States with the development of data and information products and tools in support of sustainable management of the marine environment, including marine assessments.

43. He reported that the COBSEA GRID project, "Towards engagement in the United Nations Regular Process for Global Assessment of the Marine Environment: strengthening capacity of developing countries in the seas of East Asia" was funded by the Asia-Pacific Network for Global Change Research. Several participants in this workshop had been sponsored through that project. It was proposed to organize a follow-up technical workshop on marine assessments in the region, based upon the capacity-building needs and priorities identified during the workshop.

44. The representative of IOC and its Sub-Commission for the Western Pacific expressed his organizations' appreciation of the collective efforts that had been made by all participants in making this workshop a success. With full recognition of the need for, and challenges in, the development of an integrated assessment skill, he expressed the willingness of IOC and WESTPAC to provide financial and technical support for the development of this skill in the region.

Agenda item 7: identifying significant assessments, information gaps and capacity-building needs in the region

45. Three working groups were formed and were open to all workshop participants, to identify assessments, unassessed data that might be used for assessments and information gaps, and capacity-building needs in the region.

46. The summaries from the working groups are as follows:

A. Working Group 1: Physical Sciences *(Coordinator: Mr. Peter Harris, Rapporteur: Mr. Wenxi Zhu)*

A1. In addition to the list of 127 assessments compiled by the workshop organizers, several others were mentioned and emphasized:

(a) China: there were annual reports on marine disasters, storm surge, sea level and marine environmental quality (water quality, marine ecosystem health, dump site monitoring, industrial point sources, river and atmospheric inputs, etc.);

(b) Japan: several ministries and organizations conducted monitoring and reporting of physical and chemical variables, such as temperature, salinity, sea current, sea level, dissolved oxygen, nutrients, chlorophyll, pCO_2, heavy metals and persistent organic pollutants. Extensive, well-funded, marine research programmes (the Japan Agency for Marine-Earth Science and Technology, universities) have conducted physical oceanographic surveys. Also the National Institute for Environmental Studies (Tsukuba University) conducted research in marine pathogens and heavy metals;

(c) Korea: capability existed in monitoring tide gauge (sea level), moored instruments, high-frequency radar, remote sensing and repeat oceanographic transects;

(d) Thailand: assessments on marine environment and resources; water quality assessments (but not in English); capacity existed in habitat assessment but was lacking in physical oceanography;

(e) The Three Gorges Dam report, which covered effects on coastal sedimentation;

(f) WESTPAC harmful algal bloom and marine alien species assessments.

A2. The key conclusion was that none of the countries had conducted an integrated assessment of the state of marine environment report. Monitoring reports were scattered among numerous ministries and agencies, although some countries had centralized data repositories and contributed to international programmes.

A3. No unassessed data was identified but of course it may exist unknown to participants.

A4. Information gaps included:

(a) Conceptual gaps in numerical modelling (e.g., exclusion of tides or river discharges could bias the result);

(b) Bathymetric data (especially on the inner shelf) was inadequate for numerical modelling;

(c) Suspended sediment data (useful for tracking dispersal of pollutants);

(d) Ocean acidification — pH data collected did not meet specifications for monitoring ocean acidification;

(e) Knowledge of ocean processes;

(f) Sediment discharge to the coast.

A5. Other problems included:

(a) Data quality control — an example was where tide-gauge data analysis of tidal constituents was inaccurate;

(b) Lack of data-sharing limits assessments;

(c) Data on wind/wave energy was not available;

(d) Benthic habitat data was lacking.

B. Working Group 2: Biological Sciences *(Coordinator: Mr. Wen Quan, Rapporteur: Ms. Connie Chiang)*

B1. *Existing assessments*: the following were identified as useful for the Regular Process in the region:

- *Primary production, plankton and bacteria*: national surveys were carried out in most countries in the region. At the regional level, regional cooperative projects might contain assessments but these were limited to each project area concerned. There was no region-wide plankton assessment, although primary production information may be obtained from satellite data.
- *Fisheries and aquaculture*: most countries routinely collected data on capture fisheries to monitor the status and trends. Assessments on non-commercial species were rather limited. Not many ecosystem-based fisheries assessment methods were available for integrated assessment. Models were being developed to project the role of aquaculture in the future but it was still difficult to quantify. PICES had a working group on environmental interactions on marine aquaculture in PICES countries. Assessments on socioeconomic aspects of fisheries varied from country to country based on the amount of research carried out. On a regional scale, only a few countries collected information on seaweeds.
- *Benthos, harmful algal bloom, alien species*: while there was no known regular monitoring programme for benthos, there was much harmful algal bloom monitoring and assessments were published and available throughout the region. PICES had a harmful algal bloom database, which was linked to the world harmful algal bloom database. Assessments on alien species were rare, as there was very limited baseline data available to help in determining which species should be labelled as "alien".
- *Biodiversity and habitats*: numerous assessments existed throughout South-East Asia on certain habitats, such as coral reefs and associated fish. Every country had some information on the number and kinds of species and protected areas, although this information was usually distributed among different agencies. The Convention on Migratory Species and non-governmental organizations had assessed marine mammals, seabirds and migratory species. China carried out an annual survey of sensitive habitats. The Republic of Korea had a National Cetacean Research Institute working in this field.

B2. *Unassessed data*: where no assessments had been carried out, countries often collected additional national data. Some of the information may also not be available to the public. Public international and regional databases existed but some provide mostly descriptive information and may not provide enough information for

assessments. Indicators for biological assessments were needed. Most data were eventually analysed but the outputs may not be relevant for assessment.

B3. *Information gaps*: there was limited, or no, data/information on benthos, coastal habitat loss, alien species, jellyfish bloom, and causes and impacts of overfishing and pollution. Data needed to be integrated then assessed to prevent overfishing, and joint stock assessments using a common methodology should be promoted. It was recommended that minimum data-collection requirements should be identified. Further research and monitoring were needed, as well as financial support to carry out the activities.

B4. *Capacity-building*: many regional capacity-building activities and centres have been established in the region for a long time for various issues, e.g. coral reef and fish identification, application of remote sensing data and water quality analysis. Projects and programmes provided numerous capacity-building opportunities. Capacity existed for various kinds of monitoring and data collection but was generally weak for integrated assessments. Throughout the region, there were still needs for enhancing capacity in various fields that could contribute to regional and global integrated assessments:

(a) Ecosystem-based fisheries assessment;

(b) Assessing impacts of capture fisheries on the marine ecosystem, projection of fish and shellfish stocks and aquaculture;

(c) Assessing impacts of aquaculture on surrounding biota;

(d) Ecosystem surveys;

(e) Marine biodiversity surveys;

(f) Quality assurance/quality control for data collection and analysis;

(g) Enhancing comparability and compatibility of data from different sources;

(h) Collecting information on hatchery areas;

(i) Enhancing skills to use remote sensing data for management;

(j) Biological information management, including taxonomy;

(k) Monitoring for food security;

(l) Assessing impacts of climate change on biology;

(m) Using genetic information to trace and determine common (fish) stocks and species;

(n) Assessing impacts of alien species;

(o) Rapid assessments for biodiversity;

(p) Ecological modelling and forecasting to predict impact of activities, e.g. fish production, eutrophication assessment.

C. Working Group 3: Socioeconomic Aspects *(Coordinator: Mr. Alan Simcock, Rapporteur: Mr. Wouter Rommens)*

C1. The Working Group was assisted by a very comprehensive presentation by Ms. Weiling Song (China), who provided an overview of socioeconomic data

collection, management, assessment and publication in China. Her overview included the four general issues that the Working Groups had been asked to look at: the assessment projects that were being conducted or had been completed, the main marine economic and social data that was available for assessments, data gaps and capacity-building needs for integrated assessment. Issues covered by the assessments included:

(a) Evaluations of the effectiveness of major marine industrial models;

(b) Assessment of the impact of the rising sea level on the social economy;

(c) Legislative evaluation based on regional economic and environmental development;

(d) Comprehensive assessment of the implementation of marine-relevant plans;

(e) National marine economic monitoring and assessment;

(f) Research on economic activities monitoring and controls based on environmental capacity;

(g) Assessment of the impact of main oceanic disasters on socioeconomic development in coastal areas.

C2. Specific assessment projects included:

(a) Evaluations of the effectiveness of cyclic economic models for major marine industries;

(b) Tianjin Binhai new area: rising sea level and impact assessment;

(c) Bohai environment legislative evaluation based on regional economic development;

(d) Comprehensive assessment of the implementation of the National Marine Economic Development Program;

(e) National marine economic monitoring and assessment.

C3. She explained the work China had done in comparing their classification of marine economic activities with those of other major countries and those countries' published data. This showed the problems in producing international overviews.

C4. She reported on the following existing data gaps:

(a) Investment specifically in the marine industry;

(b) Income of workers in marine industries;

(c) Research and development expenditure of marine industries;

(d) Energy and water consumption of marine industries;

(e) Turnover for each industry;

(f) Non-market value of marine resources and environment.

C5. She suggested that there were the following needs for capacity-building in support of the global assessment of the marine environment:

(a) Research on an international classification standard for marine economic activities;

(b) Improved international networking and resource-sharing;

(c) International communication and cooperative platform-building;

(d) Outreach and publication of the results.

C6. Mr. Raphael Lotilla (PEMSEA) explained that in 2009 a regional effort had been undertaken on assessing the economic importance of the marine environment in the PEMSEA region. The contribution of the marine sector was larger than anywhere else. This was important for advocacy.

C7. Other delegations also made general remarks.

C8. After these general introductions, the Working Group reviewed the economic sectors that had been identified, to establish what socioeconomic data and assessments might be available:

(a) Fisheries and aquaculture: catch and production data was held by the Food and Agriculture Organization of the United Nations (FAO). It was not clear how much information was available on the values of catch and production;

(b) Marine sand and gravel extraction: information was limited. Other deep sea mining information should be available from the International Seabed Authority (ISA);

(c) Offshore oil and gas: information probably obtainable from global trade organizations;

(d) Maritime transport: freight information was reported to and available from the United Nations Conference on Trade and Development. The World Tourism Organization was a likely source of information on cruise ships. Information on ferries would be difficult to find;

(e) Maritime transport disasters: China had studied the social and economic impact and similar information was available from regional and subregional action centres;

(f) Information on economic activity linked to maritime transport (insurance, ship broking, ship building and ship breaking) needed to be included to show the scale of activities linked to the sea;

(g) Coastal tourism was very important in East and South-East Asia but was difficult to separate from other tourism;

(h) Sea-salt industry should be added to the assessment;

(i) Desalinization was crucial for Singapore and some other localities. The overall impact, however, was small viewed from a global point of view;

(j) The chapter entitled "Use of marine genetic resources" needed to deal with economic and social aspects;

(k) Offshore wind, wave and tide energy generation was a new field and information on economics and social aspects was so far limited in scale.

C9. The Working Group then reviewed social aspects of these activities where relevant:

(a) Fisheries and aquaculture: a large population depended on this. The International Labour Organization published some data but coverage was patchy and classifications varied. Income data in particular was not available in some countries or for small-scale artisanal and subsistence fisheries;

(b) Coastal tourism had a big social impact both on tourists and on the populations that served them. Information on these social aspects was, however, limited;

(c) Desalinization: where this was used it had high social importance.

C10. Finally, the Working Group reviewed the economic and social aspects of ecosystem processes:

(a) Hydrological cycle: conceptually difficult to value;

(b) Air-sea interaction, including climate change: separate considerations applied to:

(i) Sea level data: China had analysed the impact on the economy. Singapore and Thailand had also done work on this;

(ii) Severe weather events: China had statistics on disaster costs, evaluating the trend and influence on industry and society (including injured people). IPCC was also working on this;

(iii) Acidification: existing knowledge did not allow for estimations of economic effects;

(iv) Ultraviolet radiation: changes were of limited significance in East and South-East Asia;

(v) Carbon sequestration: creation of mang ves had economic significance through their potential for carbon offset;

(c) Aesthetic and cultural services: only anecdotal information was available. Anthropologists may be able to provide further information.

47. In the discussions following the reporting-back by the three Working Groups, the following main points were made:

(a) Ballast water as a medium for transporting alien species should be considered in further detail;

(b) Numerous habitat maps were available but few integrated maps existed and most were produced through individual projects, for example, the UNEP South China Sea Project produced habitat maps to determine areas needing management improvement;

(c) Raw data may need to be accessed if no assessments existed for certain issues;

(d) Capacity-building for integrated assessments was clearly required in the region;

(e) The General Assembly had named four United Nations agencies/programmes (FAO, IMO, UNEP, IOC) to be involved in the Regular Process and had issued a more general invitation to other relevant agencies/programmes;

(f) Further work was needed to provide more information on assessments at the national level.

Agenda item 8: follow-up to the workshop

Summary of proceedings

48. The Co-Chairs presented a draft summary report of the proceedings of the workshop, which was reviewed by the participants. The Co-Chairs indicated that they would revise the draft in the light of those comments and any further comments that were received by the close of business on 29 February and, with the aid of the other members of the Group of Experts who were present, establish a final summary report.

Short-term capacity-building plan

49. Workshop participants discussed a draft statement of capacity-building needs for the Eastern and South-Eastern Asian Seas. After a number of amendments, the workshop approved the statement (see annex 15 attached).

Future means of communication and networking

50. Mr. Peter Harris (Group of Experts) gave a report on the work which was in hand to provide a website for the Regular Process.

51. Mr. Zhendong Zhan gave a report on the website that the Chinese State Oceanic Administration was creating as a focus for Chinese and regional activity in connection with the Regular Process.

52. Workshop participants discussed possibilities for improving communications and networking within the Eastern and South-Eastern Asian Seas on reporting on, and assessment of, the marine environment.

(a) The representatives of COBSEA and NOWPAP indicated that UNEP, IOC, GRID-Arendal, NOWPAP and COBSEA, with the support of APN, planned to hold a joint technical workshop later in 2012, as described more fully in the statement of capacity-building needs for the Eastern and South-Eastern Asian Seas (see annex 15);

(b) Attention was drawn to the possibility of giving a presentation on the Regular Process within the framework of the East Asian Seas Congress from 9 to 13 July 2012 in Changwon City, Republic of Korea;

(c) Emphasis was laid on the need to ensure that issues relevant to the Regular Process were brought to the attention of meetings within the frameworks of the various different competent regional organizations.

53. Mr. Peter Harris (Group of Experts) drew attention to the work of the Global Ecology and Oceanography of Harmful Algal Blooms (GEOHAB) scientific forum, which had been established in 2001 to bring together scientists from around the world working on the development of new thematic maps, linking acoustic mapping and geological sampling to marine biology in a geographical information system

environment to underpin sustainable ocean management. He said that GEOHAB wanted to extend its membership to include scientists in Asian countries working in this field.

54. The workshop agreed that the work of GEOHAB appeared to be very relevant to many issues in which the Eastern and South-Eastern Asian Seas region needed to expand its work, and asked Mr. Harris to raise with GEOHAB the possibilities of involving experts from the region in GEOHAB meetings.

Agenda item 9: any other business

55. The representative of the Islamic Republic of Iran informed the meeting about the challenges that had to be faced in the Iranian territorial sea and exclusive economic zone and in adjacent waters and the approaches that were being undertaken to monitor and assess the marine environment.

Agenda item 10: conclusion of the meeting

56. The participants in the workshop warmly thanked the People's Republic of China and the institutions involved in organizing the workshop for the excellent organization and generous hospitality, which had helped to ensure a fruitful outcome.

57. Closing remarks were made by Mr. Michael Shewchuk, on behalf of the Division for Ocean Affairs and the Law of the Sea, and by Mr. Zhanhai Zhang, Director General of the International Cooperation Department, State Oceanic Administration of China, on behalf of the host State.

Annex 15

Statement of capacity-building needs for the Eastern and South-Eastern Asian Seas

1. At the highest level, the workshop participants identified as the first priority the need for improved skills and knowledge on the conduct of integrated assessments (i.e., including environmental, economic and social aspects). Such experience/skill was lacking throughout the region and training on methodologies for conducting integrated assessments would be of direct benefit to the Regular Process.

2. Additional short-term capacity-building needs (i.e., that could deliver results within the next 18 months) identified by the workshop included the following:

(a) Building awareness of the need for interoperability between States and regions regarding several areas, including: an international classification standard for marine economic activities; quality assurance/quality control for data collection and analysis; enhancing comparability and compatibility of data from different sources; and biological information management, including taxonomy;

(b) Improved international networking and resource-sharing, including a network to facilitate international communication and cooperative platform-building related to marine environmental, social and economic data;

(c) Following the kind offer from UNEP, IOC and APN, the organization of a regional workshop focusing on capacity-building and the technical and scientific aspects of the Regular Process would aim to share information about available assessments, data and knowledge of methodologies to be used in compiling and developing the first global integrated marine assessment.

3. This regional workshop would aim at gathering scientists and relevant national authorities to raise awareness of the Regular Process within the scientific community of the region. The workshop would also aim at facilitating the appointment by States of individual scientists from the region to the pool of experts. The workshop would be co-organized by UNEP, IOC, GRID-Arendal, NOWPAP and COBSEA, with the support of APN.

4. Long-term capacity-building needs (i.e., that should be started quickly but which would only be delivering results in the next three to five years) identified by the workshop included the following:

(a) Conduct of marine habitat mapping to inform management of ecosystems, biodiversity and fisheries. This included the development of skills in areas such as collection and analysis of remote sensing data, acoustic seafloor mapping, underwater video analysis and statistical analysis of biophysical environmental data;

(b) Long-term and well-planned biodiversity assessments were needed on both commercial and non-commercial marine species, including using genetic information to trace and determine stocks and species;

(c) Ecosystem-based fisheries assessment for capture fisheries and forecasting the status of fish and shellfish stocks;

(d) Assessing impacts of capture fisheries on the marine ecosystem;

(e) Assessing impacts of aquaculture on the surrounding marine ecosystem;

(f) Assessing impacts of habitat degradation (e.g., using ecological modelling and forecasting) on projected fish and shellfish stocks and aquaculture;

(g) Monitoring of water, sediment and biota anthropogenic contamination to ensure food security;

(h) Assessing impacts of climate change on marine biota and ecosystems, including the effects of ocean temperature change, acidification, changes in coastal sediment and water discharge, changes in tidal and other currents, swell wave patterns and coastal habitat changes due to sea level rise;

(i) Assessing impacts of alien species;

(j) Assessing socioeconomic aspects.